

Serial No. 09/863,135

HRT0241

1. (Currently Amended) A method of delivering a fluid to the heart of a patient, the heart having a coronary vasculature, comprising the steps of:

- a) introducing at least one distal end of at least one perfusion catheter into a peripheral artery of said ~~the~~ patient;
- b) advancing ~~the~~ said distal end of ~~the~~ said perfusion catheter from ~~the~~ said peripheral artery into at least one coronary ostium communicating with ~~the~~ said coronary vasculature of ~~the~~ said patient;
- c) occluding ~~the~~ said coronary ostium with an occlusion device;
- d) ~~delivering a fluid to the heart through the perfusion catheter~~ infusing a cardioplegic agent through a lumen of the perfusion catheter into the coronary vasculature downstream of the occlusion device.

2. (Cancelled)

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3. (Currently Amended) A method of delivering a fluid to the heart of a patient, the heart having a coronary vasculature, comprising the steps of: The method of claim 1 wherein said

introducing at least one distal end of at least one perfusion catheter into a peripheral artery of the patient;

advancing the distal end of the perfusion catheter from the peripheral artery into at least one coronary ostium communicating with the coronary vasculature of the patient;

occluding the coronary ostium with an occlusion device; and

delivering a fluid to the heart through a lumen of the perfusion catheter ~~fluid is infused through said lumen of said perfusion catheter~~ at a rate of at least approximately 100 ml/min at a pump pressure not exceeding 350 mmHg.

4. (Currently Amended) A method of delivering a fluid to the heart of a patient, the heart having a coronary vasculature, comprising the steps of: The method of claim 1, wherein step d) comprises the substep of

introducing at least one distal end of at least one perfusion catheter into a peripheral artery of the patient;

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advancing the distal end of the perfusion catheter from the peripheral artery into at least one coronary ostium communicating with the coronary vasculature of the patient;

occluding the coronary ostium with an occlusion device; and

infusing a mixture of oxygenated blood and a cardioplegic agent to the heart to create the fluid and then delivering the fluid through a lumen of said the perfusion catheter into said the coronary vasculature downstream of said the occlusion device at a rate of at least approximately 100 ml/min at a pump pressure not exceeding 350 mmHg.

5. (Currently Amended) The method of claim 1, further comprising the step of:

e) isolating said the coronary vasculature from systemic circulation of said the patient by continuing to occlude said the coronary ostium with said the occlusion device for a period of time after delivering the fluid.

6. (Currently Amended) A method of delivering a fluid to the heart of a patient, the heart having a coronary vasculature, comprising the steps of: The method of claim 1, further comprising the step of:

introducing at least one distal end of at least one perfusion catheter into a peripheral artery of the patient;

advancing the distal end of the perfusion catheter from the peripheral artery into at least one coronary ostium communicating with the coronary vasculature of the patient;

occluding the coronary ostium with an occlusion device;

delivering a fluid to the heart through a lumen of the perfusion catheter; and

f) maintaining systemic circulation of said the patient with peripheral cardiopulmonary bypass.

7. (Currently Amended) The method of claim 6, wherein the maintaining step f) comprises:

positioning an arterial cannula in a peripheral artery of said the patient;

positioning a venous cannula in a peripheral vein of said the patient;

withdrawing venous blood from said the patient through a blood flow lumen in said the venous cannula; and

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infusing oxygenated blood into ~~said~~the patient through an infusion lumen in ~~said~~the arterial cannula.

8. (Currently Amended) A method of delivering a fluid to the heart of a patient, the heart having a coronary vasculature, comprising the steps of: The method of claim 1, further comprising the steps of:

introducing at least one distal end of at least one perfusion catheter into a peripheral artery of the patient;

advancing the distal end of the perfusion catheter from the peripheral artery into at least one coronary ostium communicating with the coronary vasculature of the patient;

occluding the coronary ostium with an occlusion device;

delivering a fluid to the heart through a lumen of the perfusion catheter;

g) introducing a second distal end of ~~said~~the perfusion catheter through an aortic valve of ~~said~~the heart of ~~said~~the patient; and

h) venting a left ventricle of ~~said~~the heart by withdrawing fluid through a venting lumen communicating with ~~said~~the second distal end of ~~said~~the perfusion catheter.

9. (Currently Amended) A method of delivering a fluid to the heart of a patient, the heart having a coronary vasculature, comprising the steps of: The method of claim 1, wherein step a)

comprises introducing a single perfusion catheter having at least two distal ends into ~~said~~the peripheral artery of ~~said~~the patient;

step b) comprises advancing ~~said~~the at least two distal ends into at least two coronary ostia;

step c) comprises occluding each of ~~said~~the at least two coronary ostia with an occlusion device proximate each of ~~said~~the at least two distal ends, respectively; and

step d) comprises delivering a the fluid through at least one lumen communicating with ~~said~~the at least two distal ends of ~~said~~the perfusion catheter into ~~said~~the coronary vasculature downstream of ~~said~~the occlusion devices.

10. (Currently Amended) The method of claim 9, further comprising the steps of:

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~~g)~~ introducing a third distal end of ~~said~~the perfusion catheter through an aortic valve of ~~said~~the heart of ~~said~~the patient;

~~h)~~ venting a left ventricle of ~~said~~the heart by withdrawing fluid through a venting lumen communicating with ~~said~~the third distal end of ~~said~~the catheter.

11. (Currently Amended) The method of claim 9, wherein ~~step a)~~ comprises introducing the distal ends of at least two perfusion catheters into said peripheral artery of said patient; ~~step b)~~ comprises advancing said distal ends of said at least two perfusion catheters into at least two coronary ostia; ~~step c)~~ comprises occluding each of said at least two coronary ostia with an occlusion device proximate each of said distal ends of said at least two perfusion catheters, respectively; and ~~step d)~~ comprises the delivering step comprises delivering the fluid through at least two lumina communicating with saidthe distal ends of ~~said~~the at least two perfusion catheters, respectively, into ~~said~~the coronary vasculature downstream of ~~said~~the at least two occlusion devices.

12. (Currently Amended) The method of claim 11, further comprising the steps of:

~~g)~~ introducing a distal end of a venting catheter through an aortic valve of ~~said~~the heart of ~~said~~the patient; and

~~h)~~ venting a left ventricle of ~~said~~the heart by withdrawing fluid through a venting lumen communicating with ~~said~~the distal end of ~~said~~the venting catheter.

13. (Currently Amended) The method of claim 1, wherein the occluding step e) comprises inflating an inflatable occlusion device to occlude ~~said~~the coronary ostium.

14. (Currently Amended) The method of claim 1, wherein the introducing step a) comprises the substeps steps of:

introducing a guide catheter having at least one internal lumen into ~~said~~the peripheral artery of ~~said~~the patient; and

introducing ~~said~~the at least one distal end of ~~said~~the at least one perfusion catheter through ~~said~~the at least one internal lumen of ~~said~~the guide catheter.

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15. (Currently Amended) The method of claim 11, wherein the introducing step a) comprises the steps substeps-of:

introducing a guide catheter having at least one internal lumen into ~~said~~the peripheral artery of ~~said~~the patient; and

introducing the distal ends of ~~said~~the at least two perfusion catheters through ~~said~~the at least one internal lumen of ~~said~~the guide catheter.

16. (Currently Amended) The method of claim 11, wherein the introducing step a) comprises the steps substeps-of:

introducing a guide catheter having at least two internal lumina into ~~said~~the peripheral artery of ~~said~~the patient; and

introducing the distal end of a first perfusion catheter through a first internal lumen in ~~said~~the guide catheter, and introducing the distal end of a second perfusion catheter through a second internal lumen in ~~said~~the guide catheter.

17. (Currently Amended) The method of claim 1, further comprising the step of:  
- performing coronary artery bypass graft surgery on the heart of the patient.

18-19. (Cancelled)

20. (Currently Amended) The method of claim 1, further comprising the steps of:  
introducing a distal end of a venting catheter through an aortic valve of ~~said~~the heart of ~~said~~the patient and venting a left ventricle of ~~said~~the heart by withdrawing fluid through a venting lumen communicating with the distal end of the venting catheter.